



PATENT APPLICATION  
MO6676  
LeA 34,925

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN APPLICATION OF

STEFFEN HOFACKER ET AL.

SERIAL NO.: 10/054,558

FILED: JANUARY 22, 2002

TITLE: PROTECTIVE COVERING WITH  
A TWO-LAYER COATING BUILDUP

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) EXAMINING GROUP NO: 1711  
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) EXAMINER: MELANIE D. BISSETT  
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**DECLARATION UNDER 37 C.F.R. §1.132**

I, Steffen Hofacker, residing in Odenthal, Germany, hereby declare as follows:

1. I am a named inventor of the invention described in the captioned application.
2. I am familiar with the subject matter of the above-identified application and with the subject matter in WO 01/98393 (BASF), US 4,292,350 (Kubitza) and CA 2 267 052 (Bayer), cited in the present office action.
3. Under my direction and control, the following experiments were carried out to demonstrate the surprising result provided by the use of specific solvents in the protective covering of the present invention. As demonstrated below, the solvents used in the present invention provide excellent adhesion of the protective covering to a polycarbonate surface, while solvents commonly used in the art provide poor adhesion to this substrate. This result could not have been predicted, based on the teachings of the cited references, alone or in combination.

**Comparison experiments**

3 Primer-Systems with different solvent mixtures were used:

1. Primer No. 27 (table 3, page 18 of the application), according to the invention

- II. Primer No. Y1, comparison example according to the state of the art
- III. Primer No. Y2, comparison example according to the state of the art

**Table I: Adhesion promoter (primers)**

Example	Polyisocyanate from table 1, page 15	Weight [g]	Polyol component	Weight [g]
27 (according to the invention)	12	13.2	A4 #	100
Y1	12	13.2	C1 *	100
Y2	12	13.2	C2 *	100

\*: composition see below

#: composition see below (analog table 2, page 17 of the application)

**Table II: Polyols composition**

	A4 (according to the invention)	C1	C2
Polyol (X) X = 1, 2, 3, 4 see page 16 of the application	3.9 g (2) 9.2 g (3)	3.9 g (2) 9.2 g (3)	3.9 g (2) 9.2 g (3)
Butyl acetate	2.3 g	---	---
Ethanol	---	172,8 g	---
1-Methoxy-2-propanol	---	---	172,8 g
Diacetone alcohol	170.5 g	---	---
Zink octoate 10% in butyl acetate	0.4 g	0.4 g	0.4 g
Equivalent weight	3,521.0 g	3,521.0 g	3,521.0 g

The preparation of the adhesion promoters (primers) was the same as described on page 17 of the application.

Example 29, page 19 of the application was repeated by using the adhesion promoters (primers) 27, Y1 and Y2; furthermore in an another experiment only the primers without the hardcoat were applied to a polycarbonate sheet (Makrolon).

After applying and curing according to example 29, page 19 an adhesion test (cross-hatching) according to DIN EN ISO 2409 was performed. The results are shown in table III. As can be seen in Table III, the inventive sample using butyl acetate and diacetone alcohol solvents provided excellent adhesion to the polycarbonate sheet,

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while the comparative samples using state-of-the-art solvents do not.

**Table III: Adhesion test**

	Base adhesion	Adhesion after storage in demineralized water for 1 h at 100 °C	Adhesion after storage in demineralized water for 2 h at 100 °C
Primer No. 27 (according to the invention)	0	0	0
Primer No. Y1	0	2	2
Primer No. Y2	0	3	3
Example 29 with primer No. 27 (according to the invention)	0	0	0
Example 29 with primer No. Y1	5	---	---
Example 29 with primer No. Y2	1	4	4

**Cross-hatching characteristic value:**

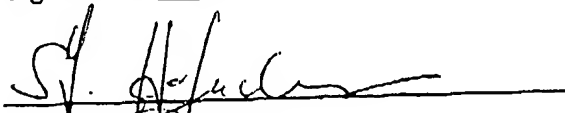
no detachment at all: (0)  
complete detachment: (5)

not carried out: (---)

Furthermore the coating from example 29 with primer No. Y1 and No. Y2 show crazes after curing whereas example 29 with primer No. 27 according to the invention is of optical quality.

The undersigned Declarant declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States code and that such willful false statements may jeopardize the validity of pending Application Serial Number 10/054,558 or any patent issuing thereon.

Signed this 18 day of March, 2005.

  
Dr. Steffen Hofacker

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